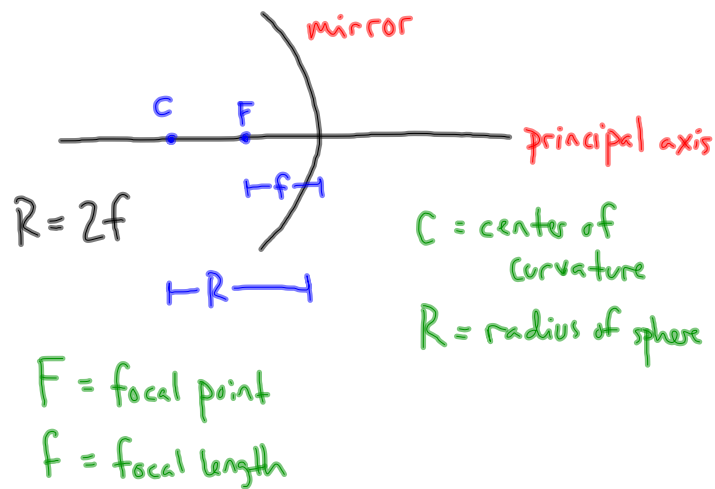


Test Wednesday, 12/14

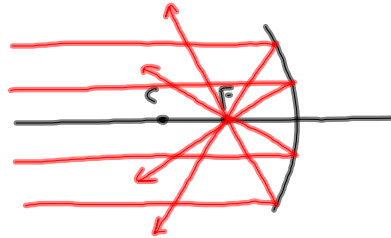
- Waves
- Sound
- Light (emphasis on this)

HW: p. 462: 1, 2, 3

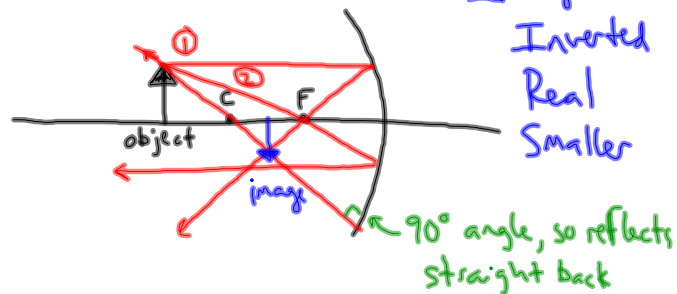
Concave Mirrors:



1) Mirror very far away from object



2) Outside of C



Rays: All originate from top of object.

1. Parallel to principal axis, through focal point
2. Through focal point, parallel to principal axis
3. Through C, back to top of object

Images:

Either

Upright

Real

Larger

Or

Inverted

Virtual

Smaller (or) Same size

Equations:

$$\frac{1}{d_o} + \frac{1}{d_i} = \frac{1}{f}$$

d_o = object distance
 d_i = image distance
 f = focal length

typically written
 in cm, so leave in
 cm

$$M = -\frac{d_i}{d_o} = \frac{h_o}{h_i}$$

M = magnification (no units)

<u>M is:</u>	<u>Image is:</u>
positive	upright
negative	inverted
$> 1 $	larger than object
$= 1 $	same size " "
$< 1 $	smaller " "

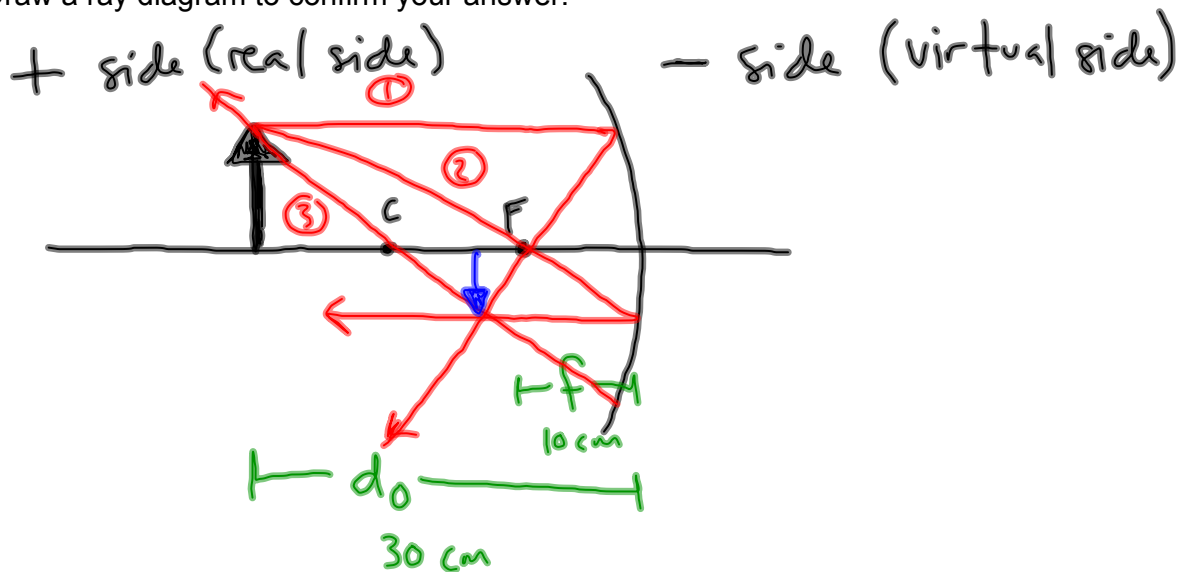
For $\frac{1}{d_o} + \frac{1}{d_i} = \frac{1}{f}$ equation, we typically
 solve for d_i .

If d_i is positive \rightarrow real image

If d_i is negative \rightarrow virtual image

Mirrors Notes and Practice Problems 1st Block 12.8.11

A concave spherical mirror has a focal length of 10.0 cm. Locate the image of a pencil that is placed upright 30.0 cm from the mirror. Find the magnification of the image. Draw a ray diagram to confirm your answer.



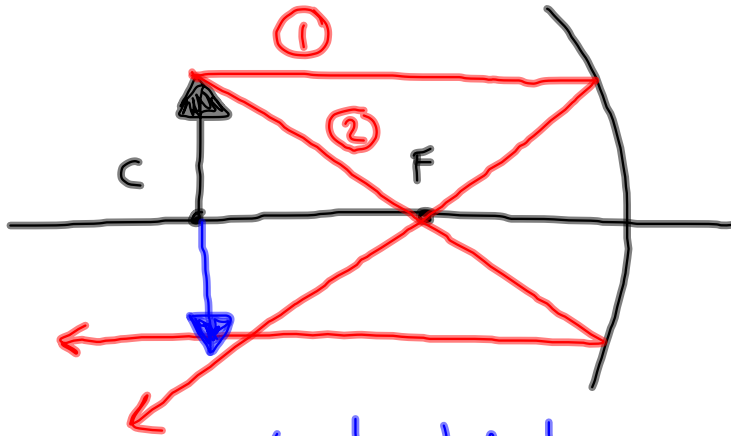
$$\frac{1}{d_o} + \frac{1}{d_i} = \frac{1}{f}$$

$$d_i = \left[\frac{1}{f} - \frac{1}{d_o} \right]^{-1}$$
$$= 15 \text{ cm}$$

$$M = -\frac{d_i}{d_o}$$
$$= -\frac{15 \text{ cm}}{30 \text{ cm}}$$
$$= -0.5$$

The image is real, inverted, smaller.

3) Object at C



* should be real, inverted, same size
my drawing is a little off..

4) Between C and F

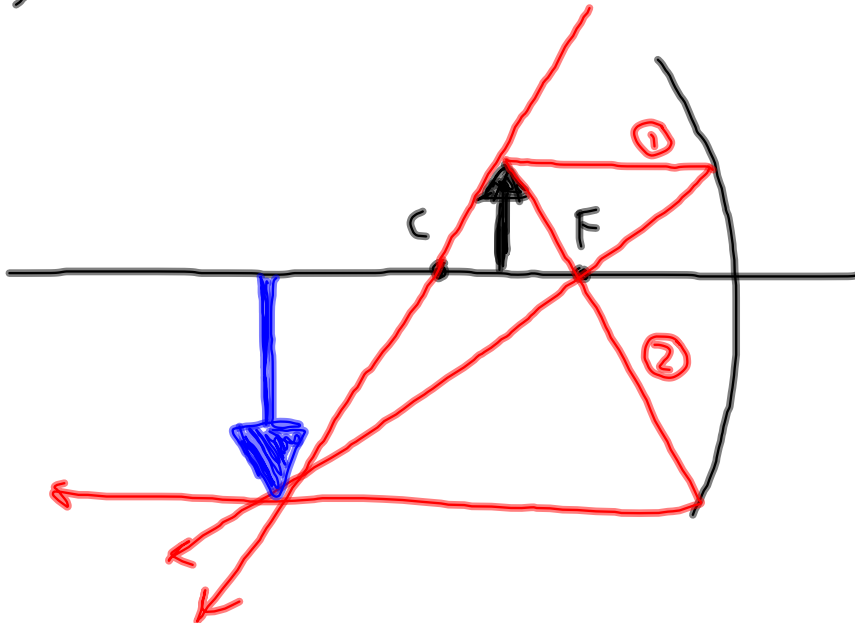
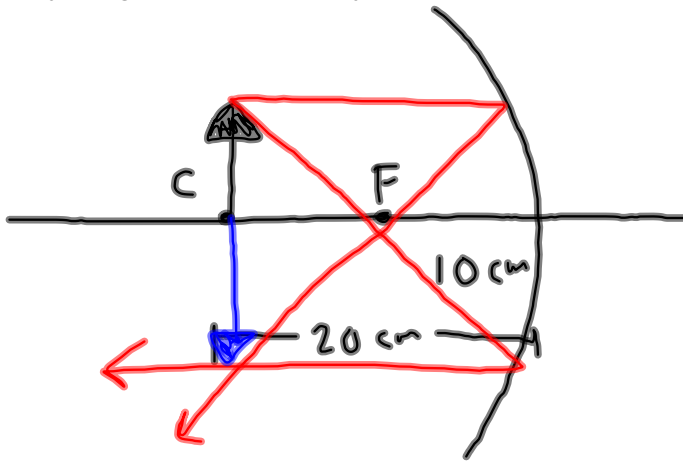


image
inverted
real
larger

A concave spherical mirror has a focal length of 10.0 cm. Locate the image of a pencil that is placed upright 20.0 cm from the mirror. Find the magnification of the image. Draw a ray diagram to confirm your answer.



$$\frac{1}{d_o} + \frac{1}{d_i} = \frac{1}{f}$$

$$d_i = 20 \text{ cm}$$

$$M = -\frac{d_i}{d_o}$$

$$= -1$$

image:
real
inverted
same size

A concave spherical mirror has a focal length of 10.0 cm. Locate the image of a pencil that is placed upright 15.0 cm from the mirror. Find the magnification of the image. Draw a ray diagram to confirm your answer.

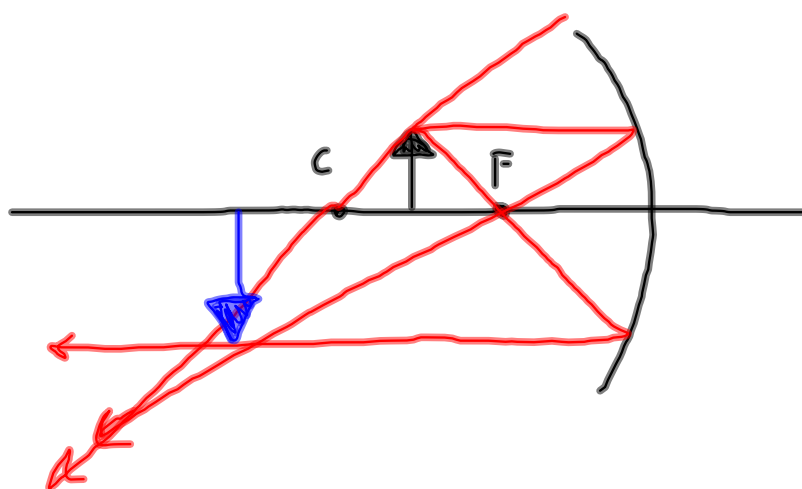


image:
real
inverted
larger

$$\frac{1}{d_o} + \frac{1}{d_i} = \frac{1}{f}$$

$$d_i = 30 \text{ cm}$$

$$M = -\frac{d_i}{d_o}$$

$$= -2$$